(iii) reading the selected pixel's output; and
(iv) comparing the selected pixel's output to an expected value *that is* based upon the defined charge provided to the selected pixel, whereby if the selected pixel's output deviates from said expected value, designating the selected pixel as partially or completely corrupted. (emphasis added)

The amendment is intended to clarify that the clause "based upon the defined charge provided to the selected pixel" modifies "an expected value." Thus, expected value is based on the defined charge provided to the selected pixel in operation (i). In the comparison operation, the pixel output is compared with the value based on the defined charge that was provided to the same pixel at the moment of testing. This comparison focuses on the selected pixel—comparing a value based on the input (defined charge) and the output read.

An example of this comparison is disclosed in the specification on page 9, second paragraph. For example, "on reset, a pixel photodiode is discharged such that the pixel assumes a voltage associated with the dark state (e.g., about 1V). If, upon sampling the reset pixel, it is found that the pixel voltage deviates from that associated with this dark state, the pixel may be deemed faulty by fault analysis and correction block 24." The defined charge in this example is about 1V. The pixel voltage is compared with "that associated with this dark state," or the expected value of 1V. Note that this expected value is derived from defined charge directly and is not a measured value.

Sweetser describes "defective pixel signal substitution in thermal imaging systems," including a mechanism to thermally test and to electrically test an array of pixels for defects. Sweetser also describes a pixel gain adjustment mechanism in a pre-processing module and a global gain adjustment mechanism in a post-processing module. Sweetser describes subtracting a produced signal and a reference value to determine an error value. The error value is then compared to a threshold. Pixels producing an error value larger than the threshold are flagged with a substitution flag. Sweetser discloses generating the reference value by several methods:

1) output of an adjacent pixel (claim 7; column 10, lines 19-21)
2) past output of the same pixel (column 10, lines 13-14; column 10, lines 52-55)
3) past output of an adjacent pixel (column 10, lines 57-58)
4) output of two or more spatially related pixels, combined (column 10, lines 23-24)
5) output of all pixels in one frame or multiple frames (column 10, lines 24-26)
6) "any combination of signals from pixels" (column 10, lines 28-30)

The Office Action notes that Sweetser "teaches comparing the selected pixels output (32) to an expected value (reference value 162) based upon the defined charge provided to the selected pixel (the read out charge is based upon the charge input to the pixels)." It is unclear to the applicants whether the Examiner interpreted the selected pixel output OR the expected value is "based upon the defined charge provided to the selected pixel."

Applicants respectfully submit that Sweetser does not teach an expected value that is based upon the defined charge provided to the selected pixel. As shown above, the reference value in Sweetser is determined by the output of one or more pixels in space or temporal vicinity of the selected pixel output. Thus the Sweetser reference value does not depend on an expected output value for the selected pixel based on the defined charge input. Instead, it appears that the value is determined based on the pixels in space or temporal proximity.

Additionally, claim 17 requires "designating the selected pixel as partially or completely corrupted" if "the selected pixel's output deviates from said expected value." Figure 3A of this application illustrates one example of the difference between partially and completely corrupted. A deviation from the ideal output within a threshold value renders the pixel partially corrupted. A deviation from the ideal output outside of a threshold value renders the pixel completely corrupted.

Sweetser does not teach designating a partially corrupted pixel. It is noted in the Office Action that the examiner views a pixel that does not exceed the threshold as being partially corrupted. However, Sweetser does not teach or suggest any designation for a pixel that does not exceed the threshold. Rather, Sweetser only designates a pixel as defective if its output exceeds the threshold. (column 10, lines 39-42) Note that the discussion associated with gain normalizer (column 9, lines 31-43) does not address any designation of pixels. Thus Sweetser does not teach an element of claim 17.

Because the reference value in Sweetser is not the same as the expected value as recited in independent claims and because Sweetser fails to disclose a partially corrupted pixel, Sweetser does not anticipate claim 17 and associated dependent claims.

As for claim 47, a similar argument applies. Claim 47 requires "means for determining if the pixel is partially corrupted or completely corrupted, wherein the determination of partial or complete corruption is based at least partially on the amount of deviation between the *output voltage and the defined voltage*." (emphasis added) The determination of partial or complete corruption is based partially on the deviation between the output voltage and the defined voltage. The defined voltage in claim 47 is the voltage at which the pixel is charged.

In Sweetser, the reference value is the output of one or more pixels adjacent in time or space. The reference of value of Sweetser is not the "defined voltage" of claim 47 because "defined voltage" has nothing to do with output of surrounding pixels at the moment or in the past. Thus, for at least this reason, Sweetser does not anticipate claim 47 or associated dependent claims.

Rejections Under 35 U.S.C. 103(a)

Claim 49 was rejected under 35 U.S.C. 103(a) as being obvious over Sweetser. Because independent claim 47 is not anticipated and patentable, claim 49 is not obvious and is patentable.

Claims 22, 38, 39, 51, and 52 are rejected under 35 U.S.C. 103(a) as being obvious over Sweetser in view of Prater. Claim 22 depends from claim 17, which is not anticipated, thus claim 22 is not obvious and allowable. Claims 38 has been amended to incorporate the limitation of claim 40, which has been indicated allowable. Thus the dependent claim 39 is also allowable.

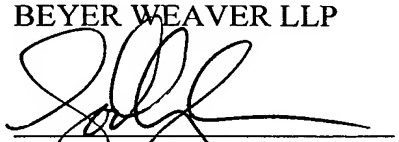
Claim 51 requires "comparing the selected pixel's output to an expected value that is based upon the defined charge provided to the selected pixel." The Office Action notes that "Sweetser et al teaches comparing the selected pixels output (32) to an expected value (reference value 162)." As argued above, the expected value based on the defined charge is not the taught in Sweetser as the reference value. Thus Sweetser together with Prater does not render claim 51 obvious because the expected value of this application is not taught in Sweeter or Prater. Applicants respectfully request withdrawal of this rejection for claim 51 and its dependent claim 52.

CONCLUSION

In light of the above remarks, the rejections to the independent claims are believed overcome for at least the reasons noted above. Applicants believe that all pending claims are allowable in their present form. Please feel free to contact the undersigned at the number provided below if there are any questions, concerns, or remaining issues.

Respectfully submitted,

BEYER WEAVER LLP



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